

REMARKS

The application has been reviewed in light of the Office Action mailed May 11, 2004. At the time of the Office Action, claims 1-35 were pending in this application, claims 1-35 were rejected.

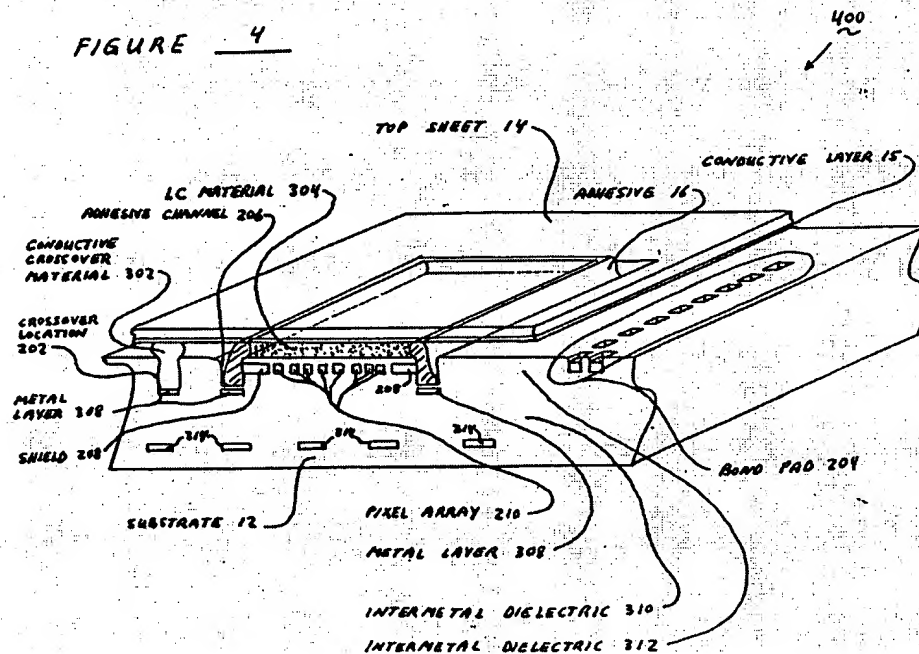
Rejections under 35 U.S.C. § 102(e)

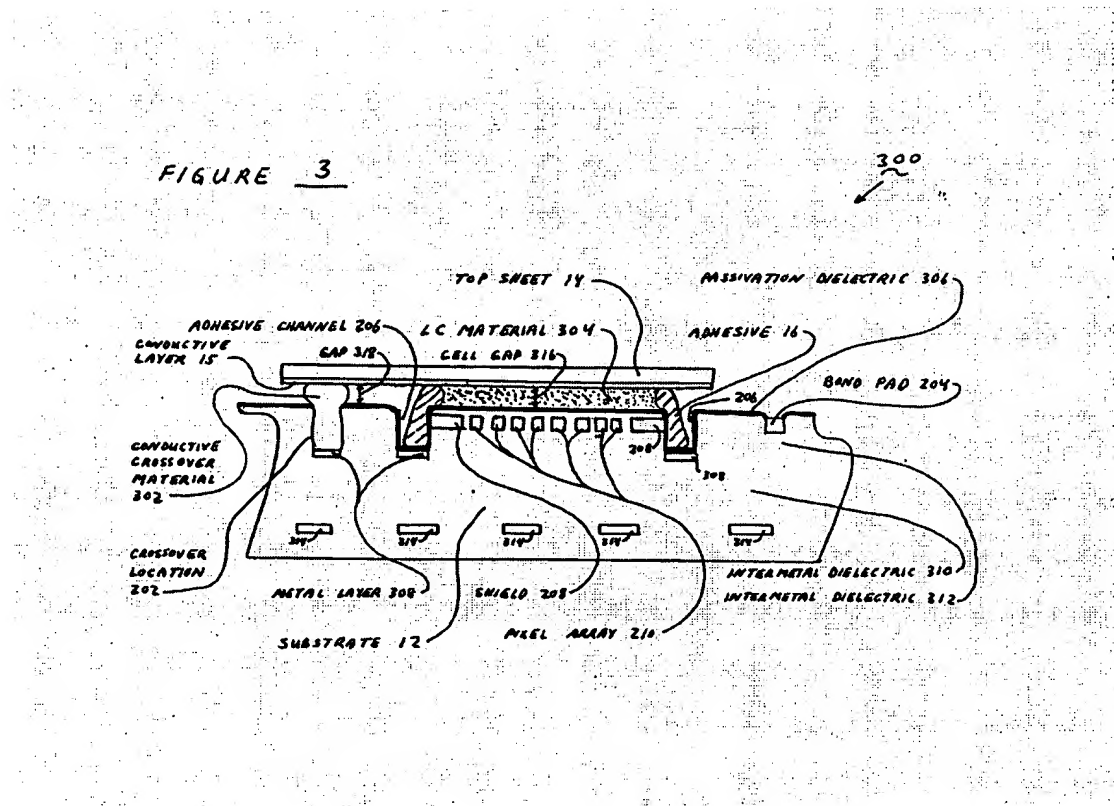
Claims 1-35 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication. No. 2001/0022401 A1 by Masao Nakamura (hereinafter "Nakamura"). Applicants respectfully traverse the rejections and submit that the reference relied upon does not disclose the present invention as claimed.

The present invention is an apparatus for optical display devices. This apparatus comprises a transparent substrate, a non-transparent substrate, a display medium (e.g., liquid crystal) disposed between the two substrates, and an adhesive material holding together the two substrates where the adhesive material is disposed proximate to a channel in one or both of the substrates. The channel prevents the adhesive material from excessively spreading laterally when the two substrates are placed together. The channel may reduce the amount of pressure that must be applied when placing together the two substrates. The channel also allows an increase in the thickness of the adhesive between the two substrates for better sealing around the display medium.

Referring to Figures 3 and 4 of the present application, reproduced below. In the case of a liquid crystal display (300 or 400), the non-transparent substrate (12) includes "pixel mirrors" (pixel array 210) and drive electronics for each of the pixel mirrors. The transparent substrate (14) includes an ITO conductive layer (15) that forms pixel capacitors with the pixel

mirrors on the non-transparent substrate (12). The liquid crystal material (304) is in a sealed chamber formed by the inner faces of the substrates (12 and 14) and the adhesive (16) between the inner faces of the substrates (12 and 14). An adhesive channel (206) prevents the adhesive (16) from substantially spreading laterally between the faces of the substrates (12 and 14). The adhesive channel (206) is integral with the substrate (12 and/or 14) and aids in forming a liquid tight seal between the two substrates (12 and 14). The adhesive channel (206) is formed into the substrate (12) as more fully described in the present application. Therefore, the adhesive channel (206) is an integral part of the substrate (12) in order for the adhesive (16) to properly seal the chamber for the liquid crystal material (304)





Referring to Figures 1(a), 1(b), 4, 5 and 6 of Nakamura, reproduced below. The Nakamura reference discloses a solid-state image pickup apparatus comprising a transparent substrate (10), a solid-state image pickup device (20), and a printed [wiring] board (30). The image pickup device (20) is attached to the transparent substrate (10) with a device fillet (43), and the printed board (30) is attached to the transparent substrate (10) with a substrate fillet (44). Fillets 43 and 44 are formed from a thermosetting resin 40 when the print board (30) is pressed against the transparent substrate (10) and the image pickup device (20) (paragraph 0077). The thermosetting resin 40 comprises an anisotropic conductive paste (paragraph 0078).

First, the image pickup device (20) is attached to the transparent substrate (10) (Figure 4). Then the thermosetting resin (40) is placed on the transparent substrate (10)

(Figure 5). Thereafter, the image pickup device (20) and the transparent substrate (10) assembly with the thermosetting resin 40 thereon are inserted into the print board (30) (Figure 6).

FIG.1 (a)

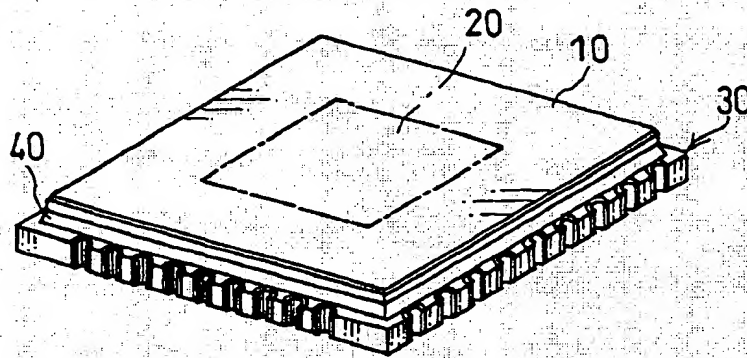


FIG.1 (b)

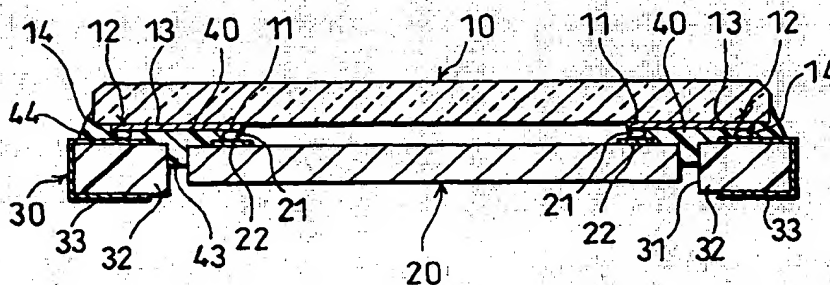


FIG. 4

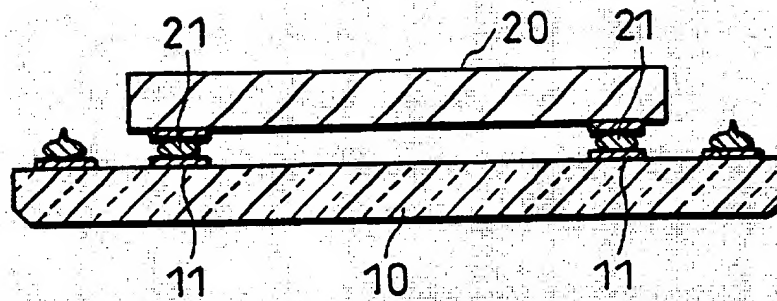


FIG. 5

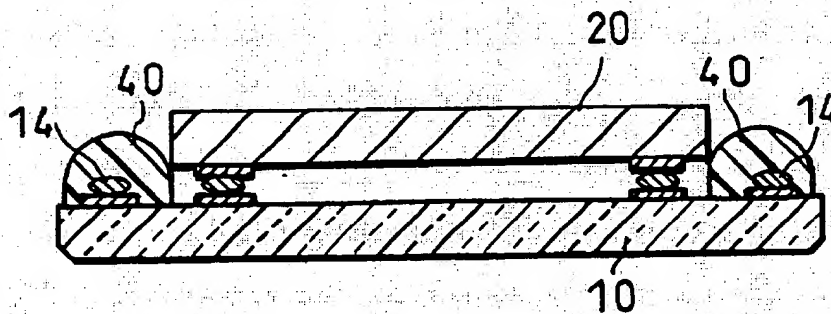
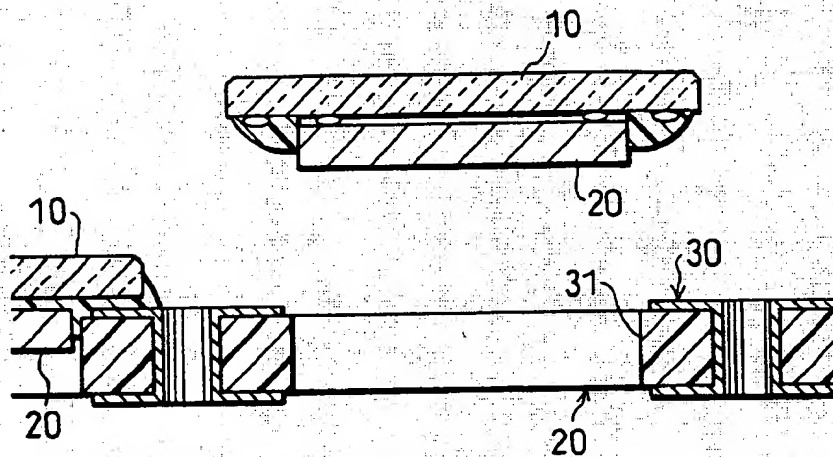


FIG. 6



In contrast to what is claimed for the present invention, the Nakamura reference does not disclose a channel formed in at least one substrate and the relationship of adhesive material with the channel, as recited in independent claims 1, 8 and 22. Nakamura does not disclose a channel formed in a substrate wherein that channel substantially limits adhesive from spreading between the two substrates. Nakamura actually relies upon the thermosetting resin (40) to spread out between the image pickup device (20), transparent substrate (10) and the print board (30) to form fillets (43 and 44). Thus, the Nakamura reference would tend to teach away from the present invention. Nowhere in the Nakamura reference is there any disclosure of a channel in a substrate that would limit the spread of an adhesive between two substrates being pressed together.

The assertion in the Office Action at page 3, lines 1-3, that “said adhesive material being disposed proximate to a channel which is in at least one of said transparent substrate and non-transparent substrate” is a mischaracterization of what paragraph 0065 of the reference relied upon actually states:

[0065] Further, between the print board 30 and the solid-state image pickup device 20 is formed a fillet for devices (hereinafter referred to as "device fillet") 43, and a fillet for substrates (hereinafter referred to as "substrate fillet") 44 is formed between the print board 30 and the transparent substrate 10. Here, a "fillet" in general refers to an adhesive portion which fills a nook or a corner to be formed in a place where two materials to be adhered are joined. In the present embodiment, as shown in FIG. 1(b), the device fillet 43 covers one side of the solid-state image pickup device 20, and the substrate fillet 44 slightly covers one side of the print board 30.

Applicants respectfully submit that a “nook” or “corner” is not a “channel” nor is there a channel disclosed in Nakamura that limits the spread of adhesive between two substrates when they are pressed together. The space between the image pickup device 20 and the print board 30 that is partially filled by the device fillet 43 cannot be construed to be a *channel in a substrate*. The Nakamura reference discloses three elements coupled together at faces and corners thereof with a conductive adhesive that depends upon spreading out between the three elements for proper adhesion thereto. Using conductive adhesive may also render the present invention inoperative since the transparent substrate (14)(conductive layer 15) and non-transparent substrate (12) must be able to be at different electrical potentials. The Nakamura reference only discloses an image pickup apparatus, not an optical display. Nakamura does not disclose a liquid crystal material (304) between substrates. Nakamura does not disclose the problem solved by the present invention, nor does it offer a solution to the problem solved by the present invention. Anticipation requires the presence in a single prior art reference disclosure of each and every

element of the claimed invention arranged as in the claims. *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984).

Claims 2-7 depend from independent claim 1, claims 9-21 depend from independent claim 8, and claims 23-35 depend from independent claim 22, and contain all limitations thereof.

All amendments are made in a good faith effort to advance the prosecution on the merits. Applicants reserve the right to subsequently take up prosecution on the claims as originally filed in this or appropriate continuation, continuation-in-part and/or divisional applications.

Applicants respectfully submit that no amendments have been made to the pending claims for the purpose of overcoming any prior art rejections that would restrict the literal scope of the claims or equivalents thereof.

Applicants respectfully request that the amendments submitted herein be entered, and further requests reconsideration in light of the amendments and remarks contained herein.

Applicants respectfully request withdrawal of all objections and rejections, and that there be an early notice of allowance.

SUMMARY

In light of the above amendments and remarks Applicants respectfully submit that the application is now in condition for allowance and early notice of the same is earnestly solicited. Should the Examiner have any questions, comments or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone or facsimile.

Applicants believe that there are no additional fees due in association with the filing of this Response. However, should the Commissioner deem that any additional fees are due, including any fees for any additional extensions of time, Applicant respectfully requests that the Commissioner accept this a Petition therefor, and direct that any additional fees be charged to, or any overpayments be credited to, Baker Botts L.L.P. Deposit Account No. 02-0383, (*formerly Baker & Botts, L.L.P.*), Order Number 075115.0331.

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August 6, 2004

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